REMARKS

Claims 2 and 11 are objected to. Claim 2 is amended to correct a typographical error, and claim 11 is canceled.

The allowability of claims 2-5 and 14 is acknowledged. However, no amendment is made because the claims from which these claims depend are thought to be patentable over the cited art.

The Office Action does not establish that claims 1, 6-13, and 15-17 are unpatentable over US patent 5,946,219 to Mason et al. ("Mason") in view of US patent 5,524,205 to Lomet et al. ("Lomet"). The rejection is respectfully traversed because the Office Action fails to show that all the limitations are suggested by the references, fails to provide a proper motivation for modifying the teachings of Mason with teachings of Lomet, and fails to show that the combination could be made with a reasonable likelihood of success.

The invention of claim 1 is a method for run-time reconfiguration of a programmable logic device (PLD) that is coupled to a host data processing arrangement. The host is configured with a run-time reconfiguration programming interface, and a run-time reconfiguration program is executed on the host. The run-time reconfiguration program uses the interface in specifying a circuit design, generating configuration data that implements the circuit design on the PLD, and configuring the PLD with the configuration data. The Office Action fails to show that these limitations are shown or suggested by Mason.

The cited sections of Mason clearly demonstrate that Mason does not show or suggest a run-time reconfiguration program that in executing specifies the circuit design, generates configuration data, and configures the PLD. The claimed run-time reconfiguration program is neither shown nor suggested by either of Mason's approaches of specifying a circuit design and generating configuration data.

In one approach described by Mason, the circuit design is initially specified via a CAD tool and a place-and-route tool is used to generate a database of data that describes the design (FIG. 4, #210, col. 2, ll. 42-52; FIG. 5, #310, col. 6, ll. 1-3). In this approach, the CAD tool is an executing program. However, the CAD tool is the interface through which the user specifies the circuit design. With a run-time reconfiguration program, the circuit design is set forth in the run-time reconfiguration program, and execution of the run-time reconfiguration program specifies the circuit design via the program interface. Thus, Mason's first approach neither teaches nor suggests the limitations of the run-time reconfiguration program.

In the second approach described by Mason, a user can modify the design defined in the database by selecting via a GUI items to change in the design database (col. 6, ll. 35-53). The GUI is provided to a user for purposes of modifying the design initially created with a CAD tool. The GUI provides a user with access to a database in which the circuit design is stored. The user can select and modify desired portions of the design database (col. 6, ll. 11-22). Even though Mason's GUI is an executing program, the GUI itself does not specify the circuit design. In Mason the circuit design is stored in the design database, and a user specifies via the GUI changes to the design database. Thus, Mason's GUI is an interface, not a program that specifies the circuit design. Therefore, Mason's GUI does not teach or suggest the claimed run-time reconfiguration program.

The Office Action acknowledges that Mason neither teaches nor suggests the limitations of designating portions of the configuration data changed in the updating step as dirty portions by the programming interface and automatically selecting the dirty portions of the configuration data by the programming interface for partially reconfiguring the PLD responsive to the run-time reconfiguration program. The Office Action fails to establish that these limitations are shown or suggested by Lomet.

Lomet teaches designating blocks that have not been stored into persistent storage as dirty blocks (col. 13, ll. 17-24). The dirty blocks are used for purposes of redoing actions in the event of a system crash (col. 13, ll. 4-11). Lomet's database system is not suggestive of a PLD, Lomet's blocks are not suggestive of configuration data for a PLD, and Lomet's recovery redo control is not suggestive of partial reconfiguration of a PLD. Therefore, Lomet's teachings are clearly not suggestive of designating portions of configuration data for a PLD as dirty portions and selecting only the dirty portions for partially reconfiguring the PLD.

The alleged motivation for combining Mason with Lomet is improper. The alleged motivation is that "it would have been obvious to combine the teachings of Mason and Lomet to partially reconfigure the PLD only on the basis of modified portions of the configuration data on the host as dictated by the designated dirty portions in order to minimize the time taken to reconfigure the programmable logic device by avoiding a complete reconfiguration of the programmable logic device."

This alleged motivation is improper because it merely states a conclusion. Addressing the "rigorous … requirement for a showing of the teaching or motivation to combine prior art references," the Court of Appeals for the Federal Circuit recently stated in *In re Dembiczak*, 175 F.3d 994, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999):

> We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, (citations omitted), although "the suggestion more often comes from the teachings of the pertinent references," *Rouffet*, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. *See, e.g., C.R. Bard*, 157 F.3d at 1352, 48 USPQ2d at 1232. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." (citation omitted)

The alleged motivation is merely a broad conclusory statement that partial reconfiguration would save time, and no evidence is provided to suggest the combination. Mason already teaches partial reconfiguration by way of determining differences between two configuration bitstreams (col. 3, ll. 37-45). The Office Action does not provide any evidence that Mason's approach is in need of improvement. Nor does the Office Action provide any evidence as to how Lomet's approach might improve Mason's approach. Furthermore, it is unlikely that Lomet's approach would be reasonably successful in Mason's system since Mason deals with handling designs for programmable logic devices and Lomet deals with redoing transactions against transaction databases in the event of a system crash.

Claim 12 is an apparatus claim, and in claim 13 the invention is a processor arrangement. To the extent that claims 12 and 13 have limitations similar to the limitations of claim 1, the Office Action does not show that claims 12 and 13 are unpatentable over the Mason-Lomet combination for at least the reasons set forth above.

Claims 6 and 15 include further limitations of the programming interface being responsive to the run-time reconfiguration program and reading from a designated source selected designated data corresponding to selected portions of the PLD. The cited portions of Mason make no mention of a programming interface being responsive to calls that request this type of information. Therefore, the Office Action fails to establish that claims 6 and 15 are unpatentable over the Mason-Lomet combination.

The rejections of claims 7-11 and 16-17 state no more than conclusions that the recited limitations are obvious over the Mason-Lomet combination. The rejections are improper because the limitations are not shown by the references, and no evidence is provided to support the conclusions.

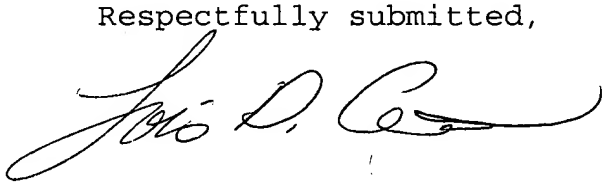
The rejection of claims 1, 6-13, and 15-17 over the Mason-Lomet combination should be withdrawn because the Office Action fails to show all the limitations are suggested by the

combination, fails to provide a proper motivation for combining the references, and fails to show that the combination could be made with a reasonable likelihood of success.

CONCLUSION

In light of the above remarks, Applicants respectfully request the allowance of Claims 1-10 and 12-17. If any action other than allowance is contemplated by the Examiner, the Examiner is respectfully requested to telephone Applicants' agent, Lois D. Cartier, at 720-652-3733.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as **first class mail** in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450, on June 28, 2004.

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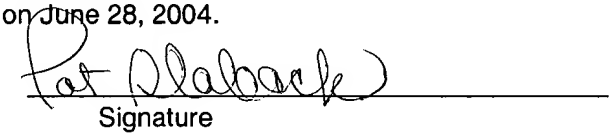
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